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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/463,874	06/07/2000	ERICH WANKER	V0179/7000	6909

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EXAMINER	
CHERNYSHEV, OLGA N	
ART UNIT	**PAPER NUMBER**
1646	

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/463,874	WANKER ET AL.	
	Examiner	Art Unit	
	Olga N. Chernyshev	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1 and 8-11 have been amended and claims 6-7 and 12-19 have been cancelled as requested in the amendment filed on January 26, 2005. Following the amendment, claims 1-5 and 8-11 are pending in the instant application.

Claims 1-5 and 8-11 are under examination in the instant office action.

2. The Text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Any objection or rejection of record, which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5 and 8-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a composition comprising a fusion huntingtin protein, nucleic acid encoding such fusion protein, vector and host cell containing that nucleic acid does not reasonably provide enablement for a composition comprising amyloidogenic fusion polypeptide, nucleic acid encoding such fusion protein, vector and host cell containing that nucleic acid as well as for host cells of transgenic animals or plants. The specification does not

enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claims 1-5 and 8-11 are directed to a composition comprising a fusion amyloidogenic protein wherein said amyloidogenic protein self-assembles subsequent to release from said fusion protein, nucleic acid encoding such fusion protein, vector and host cell containing that nucleic acid. However, the instant specification fails to provide enough guidance for one skilled in the art on how to make and use the claimed composition, thereby requiring undue experimentation to discover how to practice the full scope of Applicant's invention, as currently claimed.

The factors to be considered in determining whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art and, (8) the breadth of the claims. *In re Wands*, 8 USPQ2d, 1400 (CAFC 1988).

The nature of the invention is the demonstration that GST-huntingtin (HD) fusion proteins have increased solubility as compared to the native huntingtin protein and, after cleavage, the released huntingtin has the ability to self-assemble and form aggregates. Thus, such fusion proteins are useful for elucidation and formation of protein aggregates *in vitro* and *in* vivo with respect to Huntington's disease (pages 4-5 of the instant specification). This finding appears to be novel and, therefore, to practice the instant invention a skilled artisan would have to solely rely on the instant disclosure for guidance and protocols.

While the skill level in the art is high, the level of predictability is low. The instant claims are broadly drawn to an "amyloidogenic" fusion protein, while as opposed to the claims, what is disclosed about claimed fusion proteins is narrow: a single huntingtin fusion peptide as a sole working example of the claimed molecular embodiments and no other obvious specific amyloidogenic fusion protein and no prior art molecules which are closely related in structure or ability to self-assemble into amyloid-like fibrils. While it is not necessary that Applicant understands or discloses the mechanism by which the invention functions, in this case, in the absence of such an understanding, no extrapolation can be made of the results obtained with a single molecular embodiment of huntingtin protein to other polypeptides, or to "fragments or derivatives thereof". The standard of an enabling disclosure is not the ability to make and test if the invention worked but one of the ability to make and use with a reasonable expectation of success. In the instant case, it would appear that Applicant provides a single finding (the finding), and then presents an invitation to experiment and determine how to make other fusion proteins that will self-assemble subsequent to release from said fusion protein and, further, how to use these proteins.

With respect to claim 11, Applicant is advised that the instant specification, as filed, fails to provide any guidance, working examples or reference to prior art on how to practice the claimed composition comprising a host cell from a transgenic animal or plant. It would require undue experimentation on part of one skilled in the art to discover how to make and use host cells of transgenic animals or plants in the claimed composition.

A patent is granted for a completed invention, not the general suggestion of an idea and how that idea might be developed into the claimed invention. In the decision of *Genentec, Inc, v. Novo Nordisk*, 42 USPQ 2d 100,(CAFC 1997), the court held that:

"[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable" and that "[t]ossing out the mere germ of an idea does not constitute enabling disclosure". The court further stated that "when there is no disclosure of any specific starting material or of any of the conditions under which a process is to be carried out, undue experimentation is required; there is a failure to meet the enablement requirements that cannot be rectified by asserting that all the disclosure related to the process is within the skill of the art", "[i]t is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention in order to constitute adequate enablement".

The instant specification is not enabling because one can not following the guidance presented therein and practice the claimed invention without first making a substantial inventive contribution.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-5 and 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 is vague and indefinite for recitation "amyloidogenic (poly)peptide" and "amyloid-like fibrils or protein aggregates". With respect to the terminology used in the claims, it is noted that the instant specification does not provide a clear definition of "amyloidogenic (poly)peptide" or "amyloid-like fibrils". It is stated in the specification that "it has been generally accepted that naturally occurring mammalian protein polymers that exhibit fibrillar structures and green birefringence after Congo red staining should be classified as amyloids (Glenner, 1980)" (bottom at page 5). However, it appears that common contemporary view on the subject of amyloid, amyloid fibrils and amyloidogenesis in general contradicts this statement. Usually term "amyloid" is used to characterize abnormal depositions, amyloid plaques in brain of Alzheimer's disease patients. The main constituent of the amyloid plaques is amyloid beta (Aβ) protein, which is a product of abnormal proteolytic cleavage of the precursor molecule, amyloid precursor protein (APP). For references, see, for example Evin et al., 1994, Int. J. Exp. Clin Invest., 1, p.263-280, especially pages 263-264; also US Patent 5,795,963, especially columns 1 and 2 and US Patent 5,593,846, especially columns 1 and 2.

Thus, it is not clear and cannot be determined from the claims or the instant specification what constitutes an "amyloidogenic (poly)peptide", especially if it is not structurally related to amyloid, such as huntingtin protein.

Furthermore, the phrase "amyloid-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

7. Claims 2-5 and 8-11 are indefinite for being dependent from indefinite claim.

Allowable Subject Matter

8. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraphs, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Applicant is advised that the examination of the instant claims was limited to the subject matter elected in Paper No. 12, mailed on February 13, 2003, which encompasses a fusion GST-HD protein. Therefore, claims directed to compositions comprising fusion GST-HD protein, nucleic acids encoding GST-HD, vectors and host cells limited to GST-HD, are considered free of prior art and enabled.

Conclusion

9. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga N. Chernyshev whose telephone number is (571) 272-0870. The examiner can normally be reached on 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony C. Caputa can be reached on (571) 272-0829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Certain papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax center located in Crystal Mall 1 (CM1). The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December

28, 1993) (see 37 C.F.R. § 1.6(d)). NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by Applicant or Applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers.

Official papers filed by fax should be directed to (703) 872-9306. If this number is out of service, please call the Group receptionist for an alternative number. Faxed draft or informal communications with the examiner should be directed to (571) 273-0870. Official papers should NOT be faxed to (571) 273-0870.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Olga N. Chernyshev, Ph.D.
Primary Examiner
Art Unit 1646

March 17, 2005